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NAS 1.53:OSS-03/APP.

National Aeronautics
and Space Administration

May 8, 1995
AO No. 95-OSS-03

Announcement of Opportunity

Mars Surveyor Program: '98 Lander and Orbiter Missions Science Instruments

Appendices A–E

95-033371

Notices of Intent Due: July 10, 1995

COMPLETED

Proposals due: August 8, 1995

APPENDIX A
DESCRIPTION OF THE OPPORTUNITY

I. ANNOUNCEMENT OBJECTIVES

General scientific objectives for the exploration of the solar system have been established by the appropriate NASA scientific advisory committees, including the Committee on Planetary and Lunar Exploration (COMPLEX) of the Space Studies Board of the National Research Council, and the Solar System Exploration Subcommittee (SSES) of the NASA Advisory Council. COMPLEX, in its 1994 report entitled "An Integrated Strategy for the Planetary Sciences 1995–2010," states that "the most useful new programs to emphasize in the period from 1995 to 2010 are detailed investigations of comets, Mars, and Jupiter and an intensive search for, and characterization of, extrasolar planets." This report reinforces conclusions of earlier reports that the exploration of Mars is of the highest priority. In response to these recommendations, NASA has initiated a long-term systematic program of Mars exploration, the Mars Surveyor Program (MSP). The highest priority scientific objectives of this program are to understand the climate and volatile history of Mars, to search for evidence of past or present life, and to assess the nature and inventory of resources on Mars, with the common thread of these objectives being water.

The MSP is composed of a 10-year series of missions to Mars. Within a level funding cap, two launches, with some mix of orbiters and landers, will take place in every launch window opportunity from now through 2005. Launch opportunities occur approximately every 26 months. This Announcement of Opportunity is for the MSP 1998 orbiter visible camera investigation and the MSP 1998 lander science payload.

The goal of the Mars Surveyor Program is to carry out low-cost missions, each of which provides important, focused scientific return, and which will in sum constitute a major element of the scientific exploration of Mars. The science theme for the '98 lander, proposed by the Mars Science Working Group (MarsSWG) and confirmed by the '98 Lander Science Definition Team, will be "Volatiles and Climate History." In contrast to previous missions, a single strawman payload has not been defined. Proposals solicited by this AO are for payloads which address the science theme. The Principal Investigator (PI) will propose focused science objectives (within the theme), an instrument set, and will specify the type(s) and location(s) (latitude or longitude range) of landing sites that will address the science objectives. This AO encourages proposals for integrated lander payloads (instrument sets), although proposals for individual instruments will also be accepted. Within the limited resources of the lander, this approach is expected to maximize the scientific return.

The MSP: '98 Orbiter Mission payload includes a camera, either a rebuilt Mars Observer (MO) Gamma-Ray Spectrometer (GRS), or a rebuilt Pressure Modulator Infrared Radiometer

(PMIRR), and a radio relay for communication with the lander. This AO solicits proposals for only the visible camera investigation on the orbiter (and the lander science payload). Proposals for the GRS, PMIRR and radio relay are not solicited by this AO.

MISSION SCIENTIFIC OBJECTIVES

The Mars Surveyor Program has as its three high level goals the investigation of

- LIFE (Has there ever been life on Mars?)
- CLIMATE (What is the meteorology and climate history on Mars?)
- RESOURCES (What is the geology and inventory of resources on Mars?)

The MarsSWG has enthusiastically endorsed the investigation of life, climate, and resources on Mars as the three tenets of the Mars Surveyor Program, with focus on water as the common thread. This is consistent with the earlier MarsSWG recommendation, arrived at with substantial scientific community involvement, for the '98 Lander scientific theme to be "Volatiles and Climate History." The important role of volatiles, especially water, and the strong evidence for both long-term and episodic climate change are some of the most compelling reasons for exploration of Mars. These topics relate directly to questions of the highest scientific importance, ranging from environmental change on our own planet to the origin of life. The topics that are part of this scientific theme include, for example: atmospheric trace gases; atmospheric stable isotopes; past and present atmospheric escape rates; nature of the present climate; hydrothermal systems; weathering processes and products; carbonates, sulfates, and evaporites; polar deposits; fluvial processes and their time scales; ancient aqueous sediments; chemistry of the biogenic elements; subsurface organic materials; oxidizing compounds in the atmosphere and soil; ground ice; and many others.

A. Lander

The Mars Surveyor Program 1998 Lander Science Definition Team (SDT) considered a range of instruments and mission scenarios which could satisfy subsets of these science objectives, within the resource limitations of the program. The SDT report is given in Volume I of the Proposal Information Package (PIP).

B. Orbiter

The Mars Surveyor Program 1998 orbiter camera scientific objectives have not been defined, and should be proposed as part of the proposals submitted in response to this AO for the camera investigation. However, proposers for an orbiter camera system should indicate any synergism between their objectives and those of GRS or PMIRR.

II. TYPES OF PROPOSALS

The two types of scientific participation envisioned for the MSP:'98 Lander and Orbiter Missions are listed below. This AO invites proposals for the first type, while proposals for the second type will be invited at a later time.

A. Principal Investigator/Instrument Proposals

This AO solicits Principal Investigator/Instrument proposals for scientific participation in the NASA/MSP: '98 Lander Mission science payload and the MSP: '98 Orbiter Mission visible camera investigation. For the Lander science payload, any mobility or deployment devices, sampling mechanisms, drills, or other devices necessary for the instruments to accomplish their tasks must be proposed as part of the proposed payload/instrument. Note that the mass of devices shall be included in the overall payload mass allocation and the power for operating those devices shall be included in the payload power allocation. Investigations addressing scientific objectives other than those in Section I which take advantage of the unique characteristics of the MSP: '98 Lander Mission will also be considered, but at lower priority.

Lander science proposals are solicited for integrated suites of scientific instruments or for single scientific instruments. If an integrated suite of instruments is proposed that does not use all of the available resources, a combination of integrated and individual instruments may be selected. Alternately, a collection of individual instruments may be selected as the payload. The individual scientist responsible for each instrument or part of an instrument must be identified in the proposal.

Investigations which do not include the provision of either a single scientific instrument or an integrated suite of scientific instruments are not solicited by this AO.

The total allowable cost during the development phase for the orbiter camera investigation solicited by this AO is not to exceed $3M (real year dollars). The mass available for this instrument is between 3 and 8 kg, depending on which MO instrument (GRS or PMIRR) is selected for flight. If the PMIRR is selected, approximately 3 kg can be allowed for the camera, but if the GRS is selected, up to 8 kg could be allowed for the camera. The proposer may choose to propose both options. In either case, innovative design approaches which incorporate recent technological advances in light-weight, high performance imaging systems are solicited. A premium will be placed on the advanced technology content of the proposed camera.

The total mass of the surface science payload on the lander will not exceed 20 kg including mobility and sampling devices.

Funding available to the lander payload ($20.0M) and orbiter camera ($3.0M), spread over Phase C/D of the project is as follows:

	FY 1996	FY 1997	FY 1998	FY 1999	TOTAL
Orbiter	$0.8M	$1.2M	$0.8M	$0.2M	$3.0M
Lander	$4.9M	$8.0M	$5.8M	$1.3M	$20.0M
Total	$5.7M	$9.2M	$6.6M	$1.5M	$23.0M

The payload proposer does not necessarily need to follow this funding profile to the letter to be responsive to the AO, however, this profile is very close to the expected spread of available resources.

B. Participating Scientist Proposals

Participating Scientist proposals (to be solicited at a later date) include investigations that are instrument specific or interdisciplinary and carried out by scientists who wish to participate only in the data collection and analysis phases of the mission. Each individual whose investigation is selected will be designated as a Participating Scientist (PS) and may be attached to existing instrument teams or groups if and when appropriate, either prior to launch or during the operation phase of the mission. Proposals for Participating Scientists are not solicited by this AO, but will be the subject of one or more future announcements.

III. SCHEDULE AND PROPOSAL REVIEW PROCESS

A written Notice of Intent, signifying the writer's intent to submit a proposal in response to this AO, is due at NASA Headquarters on or before July 10, 1995.

Proposals must be received at the address given on page 2 (original plus 20 copies) on or before close of business August 8, 1995.

A peer review committee(s) appointed by NASA will review all instrument and instrument suite proposals submitted in response to this AO for possible flight on the MSP: '98 Lander and Orbiter Missions.

The selection of investigations for the MSP: '98 Orbiter and Lander Missions is planned to take place during October 1995.

IV. FORMATION OF MARS SURVEYOR PROGRAM: '98 PROJECT SCIENCE GROUP

After selection of instruments by NASA, a Mars Surveyor Program: '98 Project Science Group (PSG) will be established. All '98 Lander and Orbiter Principal Investigators (and in the case that an integrated instrument payload is selected for the lander, instrument scientists responsible for each part of the payload) will automatically become members of the PSG. The PSG will be co-chaired by the JPL Project Scientist and the NASA Program Scientist.

The PSG will meet regularly through the lifetime of the MSP: '98 Lander and Orbiter Missions and will work with the Mars Surveyor '98 Project Office. Responsibilities of the Mars Surveyor '98 PSG are described in the Proposal Information Package.

V. REQUIREMENTS AND CONSTRAINTS

A. Baseline Mission Overview

The MSP 1998 Orbiter is a low-cost spacecraft designed to carry one of the remaining MO science instruments (either GRS or PMIRR), a visible camera, and a UHF relay system for communication with the lander. The orbiter will be launched on the new Med-lite launch vehicle in December 1998, and is expected to arrive at Mars in September 1999. After an orbit insertion maneuver into a highly elliptical orbit, the spacecraft will performs a series of aerobraking maneuvers until its orbit is circularized. The final mapping orbit configuration will be a sun-synchronous polar orbit with descending node crossing at 1:00 p.m. or later. Mapping orbits, with a period of approximately 2 hours, will continue for at least one martian year. The MSP 1998 orbiter will continue to serve as a communication relay for landed vehicles for 5 years.

The MSP 1998 Lander will be launched on a separate Med-lite launch vehicle. Two types of trajectories are available with launch windows in January 1999. The first type of trajectory has an arrival at Mars in August 1999, which is southern spring/northern autumn. The second type could arrive in December 1999, which is southern summer/northern winter. The proposer's specific science objectives will drive the choice of season. The lander descent to the surface will be slowed initially by a Mars Pathfinder-heritage parachute and aeroshell. Final descent will be controlled by an active descent system which uses monopropellant hydrazine, similar to Viking. The first landed day's activities will include deployment of the solar panels, functional checkout, and establishment of communication with the orbiter and only time critical science activities. Routine science activities will commence on the second day.

Detailed descriptions of the MSP 1998 lander and orbiter baseline missions and spacecraft are given in Volumes 2 and 3 of the PIP. The PIP also contains information on the environments in which the instruments must survive and operate, PI responsibilities and deliverables, and a description of the currently envisioned capabilities of the MSP ground system and mission operations. In case of a conflict between the AO and PIP, the AO takes precedence.

B. Approaches to Reducing Instrument Costs

The scientific objectives of the lander mission, listed in Section I of this Appendix, place highest priority on the detailed in situ investigation of Mars volatiles and climate. The firm overall limitation on the science costs and the total costs to NASA of the MSP: '98 Lander and Orbiter Missions will result in a constrained selection of investigations, especially among those which address objectives of lower priority. Prospective investigators are encouraged to seek innovative approaches to reducing both instrument costs and required lander resources.

5

For example, coordination among proposers to optimize the measurement goals of related investigations, and/or to share common hardware, may lead to useful savings.

Investigators are encouraged to reduce costs by proposing to fly instrument suites that integrate a set of instruments which address several or all of the primary scientific objectives of the MSP: '98 Lander Mission.

Another approach to U.S. (NASA) cost savings, which proposers are also encouraged to investigate, may be to share payload development costs through international collaboration.

C. Special NASA Mission Constraints

Certain constraints are mandated by NASA's commitment to cost efficiency in the MSP: '98 Lander and Orbiter Missions. The cost constrained nature of the mission creates special conditions: the scientific payload will be limited by cost as well as by mass, total energy consumption, volume, data rate, duty cycle, and other key resources as specified in the Proposal Information Package. Costs of meeting planetary protection for the payload, with requirements given in the Proposal Information Package, must be included in the payload costs.

It is especially important that individuals proposing to be PI's on flight instrument investigations adequately justify the number of NASA-funded Co-I's that they plan to include in their teams. Each Co-I must have a defined task or tasks of significant value. Time phasing of Co-I involvement should be seriously considered in order to reduce overall personnel costs.

The PI must identify and quantify any nuclear materials included in his or her proposed payload.

D. Data Records Requirements and Data Validation

Scientific data analysis activities will be accomplished by the PI's and their Co-Investigators. Engineering data analysis will be accomplished by mission project personnel. The project will require that raw data, calibration records, and processed data be maintained in an updated form throughout the period of investigation. Specifically, the PI must plan to:

1. Maintain a continually updated record of the "best version" of the data until significant changes in data calibration no longer occur.

2. Make updated data records available to other investigators and project personnel during the mission for shared analysis.

3. Support the timely processing and distribution of data.

4. Archive data in the Planetary Data System (PDS) in a format which meets PDS requirements.

The selected team will not have exclusive use of their data for any proprietary period during or after the investigation. After a short period for verification and validation, the PI must deposit the validated data in the PDS. Data Products will be archived in the PDS as soon as they are available. Image data will be made available publicly immediately after reception on the ground. The science team will be expected to include an appropriate data analysis period independent of the PDS archiving activities as part of their funded Mission Operations and Data Analysis activities.

In summary, the investigation team will be responsible for initial analysis of the data, its subsequent delivery to the PDS, and the publication of preliminary scientific findings. Information on the PDS, its formats, and its requirements are available upon request (see PIP for more information).

E. Technical Approach Requirements

The proposal must address all technical aspects of the investigation from the beginning of funding through delivery of the data to the PDS. The payload team has the freedom to use their own processes, procedures, and methods, and the use of innovative processes, techniques, and activities by the payload team in accomplishing their objectives is encouraged when cost, schedule, and technical improvements can be demonstrated.

The PI is responsible for the scientific success of his/her investigation, whether a single instrument or integrated payload. The proposal must describe the technical approach the PI plans to take for every element of his/her investigation to ensure that the investigation does not go out of the bounds of the resources available including cost, that the payload will operate reliably, and that the data can be interpreted. Product assurance must be described in the proposal.

F. Technology Development and Transfer Requirements

The Mars Surveyor Program represents an opportunity for NASA to develop and test new technologies and applications, as well as transfer those technologies and applications to the private sector. The infusion of new technologies into the mission alone is not sufficient—NASA is attempting to strengthen the mechanisms by which it transfers its technologies to the private sector, including the nonaerospace sector. Mars Surveyor missions are expected to help NASA achieve the goal of "Technology Transfer," defined here as the transition of scientific and engineering knowledge from one entity to another for a potentially useful purpose. For the Office of Space Science (OSS), the emphasis is placed on technology transfer from NASA to the private sector, including the nonaerospace industry, for use in or as a commercial product or process. The means by which NASA's OSS plans to implement these processes is described in the OSS Integrated Technology Strategy, which is available from the Mars Surveyor Program Scientist (see page 4) on request. NASA's Office of Space Access and Technology sponsors and operates technology transfer programs to facilitate the transfer and commercial use of space technology. The proposer must include a description of expected new technology, how it will be developed, tested, and transferred to the private sector.

G. Educational and Public Outreach Requirements

The Mars Surveyor Program represents an opportunity for NASA to use knowledge gained and excitement from its exploration of Mars to increase the science, technology, and mathematics literacy of America. Proposed investigations must include activities which will make significant and measurable contributions to meeting national goals for the reform of science, mathematics, and technology education, particularly at the K–13 level, raise the general elevation of science and technological literacy throughout the country, and enhance the level of understanding and awareness of solar system exploration by the public. These activities must:

- Be coordinated with NASA's overall effort to support the national education agenda and to meeting national goals for education
- Be compatible and coordinated with current national and state efforts toward systemic reform and the establishment of national standards and benchmarks
- Emphasize, wherever possible, active, experiential involvement of both teachers and students
- Use outside advice from the scientific, educational, and minority communities in the planning, development, implementation, and assessment of all our education/outreach activities
- Tie into existing programs for women and minorities and, in so doing, contribute to the education and training of groups currently underrepresented in technical disciplines
- Conduct regular tests and assessments of impact and effectiveness
- Make educational materials and the results of our education/public outreach programs as widely available as possible using both existing dissemination mechanisms and new information technologies
- Maintain a focus on excellence as the standard for performance in all education/public outreach activities that are undertaken.

Proposed education activities should focus on approaches that are educationally effective and support teacher/faculty preparation and enhancement, curriculum support, systemic change, student support, or educational technology. The measurement of the effectiveness must be through an appropriate evaluation process to assess the impact at the targeted education levels.

The proposal should describe such activities, which might include substantial participation by teachers and students in the investigation, and the development and utilization of programs that will involve educational institutions at any level in the investigation.

In addition, public information programs that will inform the public by mass media or other means, or other innovative ideas for bringing planetary science to the public should be proposed.

VI. PROGRAM MANAGEMENT

The Mars Surveyor Program Office is located in the Solar System Exploration Division, Office of Space Science, NASA Headquarters, Washington, DC. The Mars Surveyor Project is managed by the Mars Exploration Program Office, at Jet Propulsion Laboratory, Pasadena, California, which also manages Mars Pathfinder and Mars Global Surveyor. The Mars Exploration Program Office is responsible for implementation of the MSP: '98 Lander and Orbiter Missions. Lockeed-Martin Company is the spacecraft contractor for the MSP:'98 Lander and Orbiter.

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APPENDIX B
GENERAL INSTRUCTIONS AND PROVISIONS

I. INSTRUMENTATION AND/OR GROUND EQUIPMENT

By submitting a proposal, the investigator and institution agree that NASA has the option to accept all or part of the offeror's plan to provide the instrumentation or ground support equipment required for the investigation, or NASA may furnish or obtain such instrumentation or equipment from any other source as determined by the selecting official. In addition, NASA reserves the right to require use, by the selected investigator, of Government instrumentation or property that subsequently becomes available, with or without modification, that will meet the investigative objectives.

II. TENTATIVE SELECTIONS, PHASED DEVELOPMENT, PARTIAL SELECTIONS, AND PARTICIPATION WITH OTHERS

By submitting a proposal, the investigator and the organization agree that NASA has the option to make a tentative selection pending a successful feasibility or definition effort. NASA has the option to contract in phases for a proposed experiment, and to discontinue the investigative effort at the completion of any phase. The investigator should also understand that NASA may desire to select only a portion of the proposed investigation and/or that NASA may desire the individual's participation with other investigators in a joint investigation, in which case the investigator will be given the opportunity to accept or decline such partial acceptance or participation with other investigators prior to a NASA selection. Where participation with other investigators as a team is agreed to, one of the team members will normally be designated as its team leader or contact point.

III. SELECTION WITHOUT DISCUSSION

The Government reserves the right to reject any or all proposals received in response to this Announcement when such action shall be considered in the best interest of the Government. Notice is also given of the possibility that any selection may be made without discussion (other than discussions conducted for the purpose of minor clarification). It is, therefore, emphasized that all proposals should be submitted initially on the most favorable terms that the offeror can submit.

IV. NON-U.S. PROPOSALS

Guidelines for non-U.S. responses to this Announcement of Opportunity are presented in Appendix C, Section B. Requirements for PI/Instrument proposals involving U.S./non-U.S. collaboration are summarized below:

1. Non-U.S. Proposals with U.S. Co-I's

In cases where the participation of a U.S. individual is included in a PI/Instrument proposal submitted by a non-U.S. individual, and where it is anticipated that such participation will be supported by NASA, a Management and Cost Plan covering such participation must be submitted to NASA as part of the proposal. This Management and Cost Plan must be signed by the U.S. individual and certified by the U.S. individual's institution. Such costs will be considered in the review and evaluation of proposals submitted by non-U.S. individuals.

2. U.S. Proposals with Non-U.S. Co-I's

Non-U.S. individuals who plan to participate as Co-Investigators on a U.S. PI/Instrument proposal must have such participation reviewed and endorsed by their appropriate governmental agency before such participation can be selected. Evidence of such review and endorsement should be provided at the time that the proposal is submitted or as soon as possible thereafter. Formal arrangements for such participation will be made by NASA's International Relations Division after selection of the investigation.

V. TREATMENT OF PROPOSAL DATA

It is NASA policy to use information contained in proposals and quotations for evaluation purposes only. While this policy does not require that the proposal or quotation bear a restrictive notice, offerors or quoters should, in order to maximize protection of trade secrets or other information that is commercial or financial and confidential or privileged, place the following notice on the title page of the proposal or quotation and specify the information, subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information (data) contained in proposals and quotations will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

RESTRICTION ON USE AND DISCLOSURE OF PROPOSAL AND QUOTATION INFORMATION (DATA)

> The information (data) contained in (insert page numbers or other identification) of this proposal or quotation constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed for other than evaluation purposes; provided, however, that in the event a contract is awarded on the

basis of this proposal or quotation, the Government shall have the right to use and disclose this information to the extent provided in the contract. This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

VI. STATUS OF COST PROPOSALS (PROPOSALS REQUESTING NASA SUPPORT)

Submission of Standard Form (SF) 1411 "Contract Pricing Proposal Cover Sheet" is required as part of the cost proposal (see Appendix E). The investigator's institution agrees that the cost proposal submitted in response to this Announcement is for proposal evaluation and selection purposes, and that, following selection and during negotiations leading to a definitive contract, the institution will be required to resubmit or execute SF Form 1411 and all certifications and representations required by law and regulation.

VII. LATE PROPOSALS

Proposals received after the deadline given in this Announcement will not be accepted and will be returned to the proposer.

VIII. SOURCE OF SPACE INVESTIGATIONS

Investigators are advised that candidate investigations for space missions can come from many sources. These sources include those selected through the Announcement of Opportunity, those generated by NASA in-house research and development, and those derived from contracts and other agreements between NASA and external entities.

IX. DISCLOSURE OF PROPOSALS OUTSIDE GOVERNMENT

NASA may find it necessary to obtain proposal evaluation assistance outside the Government. Where NASA determines it is necessary to disclose a proposal outside the Government for evaluation purposes, arrangements will be made with the evaluator for appropriate handling of the proposal information. Therefore, by submitting a proposal, the investigator and institution agree that NASA may have the proposal evaluated outside the Government. If the investigator or institution desire to preclude NASA from using an outside evaluation, the investigator or institution should so indicate on the cover. However, notice is given that if NASA is precluded from using outside evaluation, it may be unable to consider the proposal.

X. EQUAL OPPORTUNITY (U.S. PROPOSALS ONLY)

By submitting a proposal, the investigator and institution agree to accept the following clause in any resulting contract:

EQUAL OPPORTUNITY

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

2. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to (a) employment; (b) upgrading; (c) demotion; (d) transfer; (e) recruitment or recruitment advertising; (f) layoff or termination; (g) rates of pay or other forms of compensation; and (h) selection for training, including apprenticeship.

3. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, the notices to be provided by the Contracting Officer that explain this clause.

4. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

5. The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

6. The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

7. The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.

8. The Contractor shall permit access to its books, records, and accounts by the contracting agency or the Office of Federal Contract Compliance Programs (OFCCP) for the purposes of investigation to ascertain the Contractor's compliance with the applicable rules, regulations, and orders.

9. If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, the contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.

10. The Contractor shall include the terms and conditions of subparagraph 1 through 9 of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

11. The Contractor shall take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

XI. PATENT RIGHTS

1. For any contract resulting from this solicitation awarded to other than a small business firm or nonprofit organization, the clause at NFS 18-52.227-70, "New Technology," shall apply. Such contractors may, in advance of contract, request waiver of rights as set forth in the provision at NFS 18-52.227-73, "Requests for Waiver of Rights to Inventions."

2. For any contract resulting from this solicitation awarded to a small business firm or nonprofit organization, the clause at FAR 52.227-11, "Patent Rights--Retention by the Contractor (Short Form)" (as modified by NFS 18-52.227-11) shall apply.

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APPENDIX C
GUIDELINES FOR PROPOSAL PREPARATION AND SUBMISSION

A. PROPOSAL PREPARATION

The following guidelines apply to the preparation of proposals by potential investigators in response to this Announcement of Opportunity. The material presented is merely a guide for the prospective proposer and it is not intended to be all encompassing. The proposer should provide information relative to those items applicable or as otherwise required by this Announcement of Opportunity.

In order to provide a firm basis for the comparison of proposals received in response to this AO, the MSP '98 Lander and Orbiter Missions described in the Proposal Information Package, and the Mars Surveyor '98 Lander and Orbiter capabilities and constraints, the expected flight environments, ground system capabilities and constraints, and requirements for data archiving also described in the Proposal Information Package must be used for proposal preparation.

The description of any proposed instrumentation must provide adequate technical information to permit evaluation. In addition, it must specifically address those lander or orbiter resources, configurations, or special requirements necessary for successful implementation of the proposed investigation. This information should be given in sufficient detail to permit an evaluation of both the concept and the practical feasibility of the investigation. If appropriate, the proposal should describe the heritage of any proposed instrumentation, how the investigation is related to other proposed investigations, and the specific approach being taken to coordinate measurement goals and/or to share instrument hardware. The proposal should describe any technology developments which are anticipated for development of the instrument or instrument suite, and also describe backup strategies in the event that the expected technologies are not available. The proposal should also describe any recognized need for supporting laboratory research or ground-based, airborne, or other activities required to support development of the instrument and its operation during the mission.

The proposal should also contain the best possible description of the proposer's plans for data processing, management, and archiving. Many of the details of these procedures are not established at this time, but the proposal should include as much information as possible concerning the investigator's plans, requirements, and costs, especially those for unique data management requirements (hardware and software).

A uniform proposal format will be required from all proposers in order to aid in proposal evaluation and to facilitate comparative analysis.

Each proposal should be submitted in two (2) separately-bound volumes: Volume 1, Investigation and Technical Plan; and Volume 2, Management and Cost Plan. All documents must be typewritten in English and must be clearly legible. At least one copy of each document should be clear black print on white paper and of a quality suitable for reproduction. Submission of proposal material by facsimile (Fax), electronic media, video tape, floppy disk, etc., is not acceptable.

All proposals must be signed by an institutional official authorized to certify institutional support and sponsorship of the investigation, as well as concurrence in the management and financial parts of the proposal. Additionally, for all proposals requesting NASA funding, certifications regarding drug-free workplace requirements, debarment, and lobbying must be supplied; Appendix E contains the forms for these certifications.

The format required and the required contents are summarized below.

a. Cover Letter

A letter or cover page should be forwarded with the proposal. It should be signed by the investigator and an official by title of the investigator's organization who is authorized to commit the organization that is responsible for the proposal and its contents.

b. Table of Contents

The proposal should contain a table of contents.

c. Identifying Information

The proposal should contain a short descriptive title for the investigation, the names of all investigators, and the name of the organization or institution. The full name of the Principal Investigator, address with zip code, telephone and Fax numbers and e-mail address should be included.

d. Investigation and Technical Plan (Volume 1)

Volume 1 should consist of the main body of the proposal and any optional appendices. The volume should provide a clear statement of the proposed investigation and how it will address the scientific objectives of the Mars Surveyor '98 Lander and/or Orbiter mission. The proposal should contain enough background information to be meaningful to a reviewer who is generally familiar with the field, although not necessarily a specialist.

The title page of Volume 1 must state the title(s), names(s), address(es), affiliation(s), the telephone and Fax numbers, and e-mail addresses of the Principal Investigator and Co-Investigators. The title page must also contain the authorizing signatures of appropriate officials of participating organizations. Such organizations may include industrial contractors who are part of the proposed team. In the Preface to Volume 1 the proposer must also include the following two pages: (1) a separate abstract, one page or less in length,

describing the proposed investigation; (2) a separate table, one page or less in length, listing the major instrument parameters or specifications of the investigation.

The main body of Volume 1 (Items 1–5 below) is limited as follows:

- for single instrument proposals, twenty-five (25) single-spaced, typewritten pages, without reduction, including illustrations, table of contents, title page, and preface pages and may contain no more than two (2) foldout pages;

- for instrument suite proposals, a maximum of seventy-five (75) pages, containing no more than six (6) foldout pages.

Appendices are limited to a total of five (5) single-spaced, typewritten pages, without reduction for single instrument proposals, and fifteen (15) pages for instrument suite proposals. In complying with page limits, no page should contain more than 50 lines of text, and the type size should not be smaller than 10-point font, with a minimum margin of 2.5 cm on all sides.

Volume 1 generally will contain the following:

1. Summary. A simple, concise statement about the investigation, its conduct, and the anticipated results.

2. Objectives and Significant Aspects. A brief definition of the objectives, their value, and their relationships to past, current, and future efforts. The history and basis for the proposal and a demonstration of the need for such an investigation. A statement of present development in the discipline field, and areas for potential insertion of new technology. Provisions for public educational outreach of the proposed investigation.

3. Investigation Approach.

   a. Fully describe the concept of the investigation.
   b. Detail the method and procedures for carrying out the investigation.

4. Instrumentation. This section should describe all information necessary to plan for experiment development, integration, ground operations, and flight operations. This section must be complete in itself without the need to request additional data. Failure to furnish complete data may preclude evaluation of the proposal.

   i. Payload/Instrument Description. This section should fully describe the instrumentation (instruments and any associated deployment/mobility/sampling devices) and indicate items which are proposed to be developed, as well as any existing instrumentation.

Performance characteristics should be related to the experiment objectives as stated in the proposal.

ii. Payload/Instrument Integration. This section should describe all parameters of the instrument pertinent to the accommodation of the instrument in the spacecraft. These include, but are not limited to: volumetric envelope (including view angle requirements), weight, power, and energy requirements, thermal requirements, telemetry requirements, sensitivity to or generation of contamination (e.g., electromagnetic interference, gaseous effluent), data processing requirements. Energy requirements and a time profile of power requirements should be described.

iii. Ground Operations. This section should identify requirements for prelaunch or postlaunch ground operations support.

iv. Flight Operations. This section should identify any requirements for flight operations support including instrument testing, calibration, and mission planning. Describe any special communications or near real-time ground support requirements and indicate any special equipment or skills required of ground personnel.

5. Data Reduction and Validation. A discussion of the data reduction and validation plan including, insofar as possible, the method and format. The plan should include a schedule for the submission of reduced and validated data, as specified in this Announcement of Opportunity.

6. Roles and Responsibilities. The roles and responsibilities of the PI and of each Co-Investigator must be described, along with a time-phasing of their activities. Because the number of participants will be limited, each participant must have an identified specific function which makes a demonstrable contribution to the development and/or implementation of the investigation. A condensed description of all prospective participants' relevant background, experience, and selected publications (if appropriate) should be provided.

e. Management and Cost Plan (Volume 2)

The management plan sets forth the investigator's approach for managing the work, the recognition of essential management functions, and the overall integration of these functions in order to meet the established review and delivery dates. It provides insight into the organization proposed for the work, including the internal operations and lines of authority with delegations, together with internal interfaces and relationships with NASA, major subcontractors, and associated investigators.

This volume is limited to 50 pages for individual instruments and 100 pages for an integrated instrument suite.

The following items must be supplied in Volume 2.

1. Method of Instrument/Payload Acquisition. Volume 2 must describe the proposed method of instrument acquisition. Specifically, it must include the following, as applicable:

   (i) Rationale for the investigator to obtain the instrument/payload through or by the investigator's institution.

   (ii) Method and basis for the selection of the proposed instrument/payload fabricator.

   (iii) Unique or proprietary capabilities of the instrument/payload fabricator that are not available from any other source.

   (iv) Contributions or characteristics of the proposed fabricator's instrument/payload that make it an inseparable part of the investigation.

   (v) Availability of supporting personnel in the institution to successfully administer the instrument/payload contract and technically monitor the fabrication.

   (vi) Status of development of the instrument/payload, e.g., what additional development is needed. Areas that need further design or in which unknowns are present. Backup options for any function or hardware requiring technology development.

   (vii) Method by which the investigator proposes to:

      (a) Prepare instrument/payload hardware and software specifications.

      (b) Review development progress.

      (c) Review design and fabrication changes.

      (d) Participate in testing program.

      (e) Participate in final checkout and calibration.

      (f) Provide for integration of instrument/payload.

      (g) Support the flight operations.

(h) Coordinate with Co-Investigators, other related investigations, and the payload integrator.

(i) Assure safety, reliability, quality and product assurance.

(j) Control cost

(viii) For proposals seeking NASA funding, planned participation by small and/or minority business in any subcontracting for instrument fabrication or investigative support functions.

All major facilities, laboratory equipment, and ground-support equipment (GSE) (including those of the investigator's proposed contractors and those of NASA and other U.S. Government agencies) essential to the experiment in terms of its system and subsystems are to be indicated, distinguishing insofar as possible between those already in existence and those that will be developed in order to execute the investigation. The outline of new facilities and equipment should also indicate the lead time involved and the planned schedule for construction, modification, and/or acquisition of the facilities.

2. Schedules and Responsibilities. Volume 2 must include schedules necessary for the logical and timely pursuit of the work, accompanied by a description of the investigator's work plan and deliverables to the Mars Surveyor '98 Lander and/or Orbiter mission, and the responsibilities of the Co-Investigators. A discussion must be provided of the specific roles that each of the participants and their institutions intend to play in the investigation. This discussion should include a statement of the portion of time which each participant expects to devote to the investigation and of the institutional resources on which each can draw.

3. Cost Plan For Proposals Requesting NASA Support. Volume 2 must also provide a detailed estimate of the total cost of the investigation and cost spread per Government Fiscal Year, along with sufficient technical information on which to judge the reliability of the figures. The assumptions on which the estimate is based should be stated, particularly with regard to Government-furnished equipment and services. Reserve should be shown explicitly. Details on Cost Proposal Certifications are provided in Appendix B (General Instructions and Provisions) to this AO.

In addition to submitting the SF 1411 (see Appendix E), the cost plan should summarize, in real-year dollars, and by Government Fiscal Year (October 1 to September 30), the total investigation cost by major categories of cost as well as by function.

The categories of cost should include the following:

a. Direct Labor. List by labor category, with labor hours and rates for each. Provide actual salaries of all personnel and the percentage of time each individual will devote to the effort.

b. Overhead. Include indirect costs which, because of their incurrence for common or joint objectives, are not readily subject to treatment as a direct cost. Usually this is in the form of a percentage of the direct labor costs.

c. Materials. This should give the total cost of the bill of materials, including estimated cost of each major item. Include lead time of critical items.

d. Subcontracts. List those over $25,000, specify the vendor and the basis for estimated costs. Include any baseline or supporting studies.

e. Special Equipment. Include a list of special equipment with lead and/or development time. Include number of units and types.

f. Travel. List estimated number of trips, destinations, duration, purpose, number of travelers, and anticipated dates.

g. Other Costs. Costs not covered elsewhere.

h. General and Administrative Expense. This includes the expenses of the institution's general and executive offices and other miscellaneous expenses related to the overall business.

i. Fee (if applicable).

Cost summaries, using the forms included with Appendix E, should be attached to show total cost allocable to the following by Government Fiscal Year:

a. PI and Co-I Costs for Science Support. The science support category includes all efforts associated with overall investigation management; support of the Mars Surveyor '98 PSG; the development of calibration requirements (but not calibration itself); the planning for the mission operations/data analysis phase, including necessary prelaunch development of ground software required only for postlaunch activities. This category begins on November 1, 1995, and ends on March 31, 1999 (approximately launch plus 30 days).

b. Hardware Costs. The hardware category consists of all efforts, including field support at JPL, associated with the design, fabrication, test, calibration, operation and maintenance of the flight instrument(s), enabling devices and a suitable complement of spare components (and

functional or nonfunctional models such as Engineering Models and Temperature Control Models if proposed); the design, development, test, operation, and maintenance of instrument ground support equipment; the design, test, and maintenance of instrument and support equipment software; support to the Project regarding matters related to the integration of the flight instrument with the spacecraft; and the engineering management of the foregoing efforts. This category begins on November 1, 1995, and ends on March 31, 1999.

c. Mission Operations/Data Reduction and Validation Costs. The mission operations/data validation phase includes all costs associated with the investigation beginning on April 1, 1999, including support of the PSG, mission operations, computer time, and data reduction, validation, and archiving. As with science support, it also includes investigator support of the PSG working groups, but in the period from April 1, 1999, until October 30, 2001.

B. PROPOSAL SUBMISSION

The following rules apply to the submission of proposals from both U.S. and non-U.S. institutions in response to this Announcement of Opportunity.

1. Quantity

An original plus twenty (20) copies of Volume 1 (Investigation and Technical Plan) and an original plus twenty (20) copies of Volume 2 (Management Plan and Cost Plan) must be submitted by all proposers to the following NASA address:

Mr. Joseph M. Boyce
Mars Surveyor Program (AO)
Suite 700
400 Virginia Avenue, SW
Washington, DC 20024
U.S.A.

2. Deadline

Proposals must arrive at the above addresses on or before August 8, 1995. Proposals received after this date will be returned to the proposer.

3. Proposals from Non-U.S. Institutions

The following guidelines are established for non-U.S. responses to this Announcement of Opportunity.

Proposals from individuals outside the United States must be typewritten in English and in the same format as U.S. proposals. Proposers from non-U.S. institutions are not required to submit a Cost Plan unless U.S. individuals seeking NASA support are involved in the proposal; however, a Management Plan must be submitted.

In cases where the participation of a U.S. individual is included in a proposal submitted by a non-U.S. individual, and where it is requested that such participation be supported by NASA, a Management and Cost Plan covering such participation must be submitted to NASA as part of the proposal. This Management and Cost Plan must be signed by the U.S. individual and certified by the U.S. individual's institution. Such costs will be considered in the review and evaluation of proposals submitted by non-U.S. individuals.

Proposers from non-U.S. institutions must have their proposals reviewed and endorsed by the appropriate sponsoring government agency. Such endorsement by a non-U.S. organization indicates:

1) The proposal merits careful consideration by NASA.

2) If the proposal is selected, sufficient funds will be available to undertake the activity envisioned.

A letter of endorsement from the non-U.S. governmental agency must be submitted to the NASA address given above. A copy of the proposal and the endorsement letter also must be sent to:

Ms. Shiron D. Gaines
International Relations Division
Code IRD
NASA Headquarters
Washington, DC 20546-0001
U.S.A.

All proposals from non-U.S. institutions will compete on an equal basis with U.S.-originated proposals, and go through the same review, evaluation, and selection process. For those non-U.S. proposals selected, NASA will arrange with the sponsoring agencies for participation on a cooperative (no exchange of funds) basis, in which NASA and the sponsoring agencies will each bear the cost of discharging its respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

1) A letter of notification by NASA; and

2) An exchange of letters between NASA and the sponsoring governmental agency.

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APPENDIX D
PROPOSAL EVALUATION CRITERIA, SELECTION, AND IMPLEMENTATION

A. EVALUATION CRITERIA

The fundamental aim of the investigation acquisition process is to identify scientific ideas and unique instrumental and analytical capabilities which best suit the overall scientific and cost objectives of the Mars Surveyor Program: '98 Lander and Orbiter Missions, as described in this AO. The following criteria will be used in evaluating all proposals submitted in response to this AO. Criteria 1 and 2 are the most important, and have equal weight; criteria 3–8 are listed in order of descending importance.

1. The scientific and technological merit of the proposed investigation and its relevance to this specific opportunity and to the established mission plans and objectives. In particular, the degree to which the orbiter camera incorporates advanced technology will be considered.

2. Total cost and management considerations. Total cost will be considered to include not only that proposed for the instrument development and for data validation, but also the impact of the instrument and the investigation on lander and orbiter mission operation costs. The technical and cost risk (uncertainty) associated with the investigation will also considered. Due to the program's strict financial constraints, any proposed instrument options that would enhance scientific return but increase cost should be clearly identified and costed so that evaluation and selection decisions can be made. Management aspects include demonstrated capability to adhere to sound business practices.

3. The adequacy of the proposed instrument or integrated instrument suite for the proposed investigation, with particular regard to the instrument's or instrument suite's ability to supply the data needed for the investigation within the Mars Surveyor Program: '98 Lander and Orbiter Missions constraints such as mass, volume, available energy, available data storage and transmission rates, and sequencing. Relationships of proposed instrumentation to developed techniques, to previously flown spacecraft instruments, or to existing hardware will be factors specifically considered in determining adequacy.

4. The competence and relevant experience of the proposer and any proposed investigative team as an indication of their ability to carry the investigation to a successful conclusion.

5. The reputation and interest of the proposer's institution, as measured by the willingness of the institution to provide the necessary support (logistics, facilities, etc.) to ensure that the investigation can be completed satisfactorily.

6. Provision for public and educational outreach of the proposed investigation.

7. Provisions allowed during the instrument or instrument suite detailed design and development phases for inclusion of potential new technology.

8. Provision for transferring for other uses, potentially new scientific instrument technology developed during the proposed investigation.

NASA may desire to select only a portion of the proposer's investigation and may also desire the proposer's participation with other investigators in a joint investigation. In this case, the proposer will be given the opportunity to accept or decline such partial acceptance and/or participation with other investigators.

B. EVALUATION AND SELECTION PROCEDURES

A scientific and technical peer review will be conducted by NASA of all proposals submitted in response to this AO.

1. Evaluation Process

Proposals received in response to this AO which request financial support from NASA will be evaluated in accordance with the provisions of NASA Handbook NHB 8030.6B (Guidelines for Acquisition of Investigations). All proposals will be subjected to a preliminary screening to determine their suitability and responsiveness to the AO. Proposals which are not responsive to the intent of the AO will be handled as correspondence. Those proposals which are responsive to the AO will then be subjected to a preliminary technical, management, and cost assessment.

NASA will make use of both the investigator's proposal, and an independent technical and cost evaluation of the proposal to be provided by a NASA engineering, management, and cost evaluation panel. This evaluation will include assessment of the cost impact of accommodating the instrument or integrated instrument suite in the mission payload; instruments which exceed the lander or orbiter capabilities will be charged with the cost of any required spacecraft modifications.

Following these preliminary actions, the scientific and technical aspects of each proposal will be assessed by panels composed of reviewers who are scientific and technical peers of the proposers. The purpose of this peer evaluation will be to determine the scientific and technical merit of each proposal, expressed in terms of its strengths and weaknesses. Results of the earlier technical and cost evaluation will be available to these reviewers.

A

1. Categorization Process

After these evaluations, a Categorization Subcommittee, consisting of U.S. civil servants, will consider the totality of all evaluations, including additional information regarding engineering, management, and cost aspects, in order to categorize the proposals submitted for NASA funding, according to the following definitions:

> Category I: Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the Announcement's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and within budget and that the data can be properly reduced and validated in a reasonable time.
>
> Category II: Well-conceived and scientifically and technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.
>
> Category III: Scientifically and technically sound investigations which require further development.
>
> Category IV: Proposed investigations which are recommended for rejection for this particular opportunity, for scientific, technical, cost, or other reasons.

After the categorization of proposals, representatives of the NASA Program and Project Office may visit the proposer's institution(s) for those proposals with a reasonable chance of being selected for award, to assess cost realism and development risk and to further clarify the existing proposal. This is not an opportunity to revise a submitted proposal.

3. Selection Process

Following the evaluations described above, the NASA Program Office (Solar System Exploration Division, Office of Space Science) will develop a payload recommendation. This recommendation, and all peer review and categorization materials on all proposals submitted for NASA funding, may be submitted to the Space Science Steering Committee for review. Selections of investigations will be made by the Associate Administrator for Space Science (NASA).

APPENDIX E
FORMAT AND CERTIFICATION FORMS

MARS SURVEYOR PROGRAM'98: LANDER AND ORBITER MISSIONS
PRINCIPAL INVESTIGATOR PROPOSAL
COST SUMMARY FORM (DEVELOPMENT PHASE)

LANDER		**ORBITER**
Single instrument	Integrated Instruments	Camera
___	___	___

Proposer Name _____

Proposer Institution _____

Short Title of Proposal _____

Cost Category	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**	**TOTAL**
A. Science Support	_____	_____	_____	_____	_____
B. Hardware	_____	_____	_____	_____	_____
Total A + B Real Year Dollars	_____	_____	_____	_____	_____

MARS SURVEYOR PROGRAM'98: LANDER AND ORBITER MISSSIONS
PRINCIPAL INVESTIGATOR PROPOSAL
COST SUMMARY FORM (MO&DA PHASE)

Proposer Name _____

Proposer Institution _____

Short Title of Proposal _____

Cost Category	Funding Requirement (Real Year Dollars)			
	FY 1999	FY 2000	FY 2001	TOTAL
A. MISSION OPERATIONS, DATA ANALYSIS AND ARCHIVING FROM L + 30 DAYS TO COMPLETION. REAL YEAR DOLLARS.				

CONTRACT PRICING PROPOSAL COVER SHEET

1. SOLICITATION/CONTRACT/MODIFICATION NO.

FORM APPROVED OMB NO. 9000-0013

Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, D.C. 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0013), Washington, D.C. 20503.

NOTE: This form is used in contract actions if submission of cost or pricing data is required. (See FAR 15.804-6(b))

2. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

3A. NAME AND TITLE OF OFFEROR'S POINT OF CONTACT

3B. TELEPHONE NO.

4. TYPE OF CONTRACT ACTION (Check)

☐	A. NEW CONTRACT	☐	D. LETTER CONTRACT
☐	B. CHANGE ORDER	☐	E. UNPRICED ORDER
☐	C. PRICE REVISION/ REDETERMINATION	☐	F. OTHER (Specify)

5. TYPE OF CONTRACT (Check)

☐ FFP ☐ CPFF ☐ CPIF ☐ CPAF
☐ FFI ☐ OTHER (Specify)

6. PROPOSED COST (A+B=C)

A. COST	B. PROFIT/FEE	C. TOTAL
$	$	$

7. PLACE(S) AND PERIOD(S) OF PERFORMANCE

8. List and reference the identification, quantity and total price proposed for each contract line item. A line item cost breakdown supporting this recap is required unless otherwise specified by the Contracting Officer. (Continue on reverse, and then on plain paper, if necessary. use same headings.)

A. LINE ITEM NO.	B. IDENTIFICATION	C. QUANTITY	D. TOTAL PRICE	E. REF.

9. PROVIDE NAME, ADDRESS, AND TELEPHONE NUMBER FOR THE FOLLOWING (If available)

A. CONTRACT ADMINISTRATION OFFICE

B. AUDIT OFFICE

10. WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS WORK? (If "yes," identify)
☐ YES ☐ NO

11A. DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT? (If "Yes," complete Item 11B)
☐ YES ☐ NO

11B. TYPE OF FINANCING (✓ one)
☐ ADVANCE PAYMENTS ☐ PROGRESS PAYMENTS
☐ GUARANTEED LOANS

12. HAVE YOU BEEN AWARDED ANY CONTRACTS OR SUBCONTRACTS FOR THE SAME OR SIMILAR ITEMS WITHIN THE PAST 3 YEARS? (If "Yes," identify item(s), customer(s) and contract number(s))
☐ YES ☐ NO

13. IS THIS PROPOSAL CONSISTENT WITH YOUR ESTABLISHED ESTIMATING AND ACCOUNTING PRACTICES AND PROCEDURES AND FAR PART 31, COST PRINCIPLES? (If "No," explain)
☐ YES ☐ NO

14. COST ACCOUNTING STANDARDS BOARD (CASB) DATA (Public Law 91-379 as amended and FAR PART 30)

A. WILL THIS CONTRACT ACTION BE SUBJECT TO CASB REGULATIONS? (If "No," explain in proposal)
☐ YES ☐ NO

B. HAVE YOU SUBMITTED A CASB DISCLOSURE STATEMENT (CASB DS-1 or 2)? (If "Yes," specify in proposal the office to which submitted and if determined to be adequate)
☐ YES ☐ NO

C. HAVE YOU BEEN NOTIFIED THAT YOU ARE OR MAY BE IN NON-COMPLIANCE WITH YOUR DISCLOSURE STATEMENT OR COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)
☐ YES ☐ NO

D. IS ANY ASPECT OF THIS PROPOSAL INCONSISTENT WITH YOUR DISCLOSED PRACTICES OR APPLICABLE COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)
☐ YES ☐ NO

This proposal is submitted in response to the RFP, contract, modification, etc. in Item 1 and reflects our best estimates and/or actual costs as of this date and conforms with the instructions in FAR 15.804-6(b) (2), Table 15-2. By submitting this proposal, the offeror, if selected for negotiation, grants the contracting officer or an authorized representative the right to examine, at any time before award, those books, records, documents and other types of factual information, regardless of form or whether such supporting information is specifically referenced or included in the proposal as the basis for pricing, that will permit an adequate evaluation of the proposed price.

15. NAME AND TITLE (Type)

16. NAME OF FIRM

17. SIGNATURE

18. DATE OF SUBMISSION

CERTIFICATION REGARDING
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS
PRIMARY COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 28, 1988 Federal Register (pages 19160–19211). Copies of the regulations may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, D.C. 20202-4725, telephone (202) 732-2505.

A. The applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph A.(b) of this certification;

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

C. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lowered Tier Covered Transactions (Subgrants or Subcontracts)

(a) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principles is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department of agency.

(b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name | AO or NRA Number and Title

Printed Name and Title of Authorized Representative

Signature | Date

Printed Principal Investigator Name | Proposal Title

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85. Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government-wide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

I. GRANTEES OTHER THAN INDIVIDUALS

A. The grantee certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about --

(1) The dangers of drug abuse in the workplace;

(2) The grantees policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will

(1) Abide by the terms of the statement; and

(2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d) (2), with respect to any employee who is so convicted --

(1) Taking appropriate personnel action against such an employee, up to and including termination; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or Local health, Law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f)

B. The grantee shall insert in the space provided below the site(s) for the performance or work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

_____

_____

_____

_____

Check _____ if there are workplaces on file that are not identified here.

II. GRANTEES WHO ARE INDIVIDUALS

The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with the grant.

Organization Name | AO or NRA Number and Title

Printed Name and Title of Authorized Representative

Signature | Date

Printed Principal Investigator Nam | Proposal Title

CERTIFICATION REGARDING LOBBYING

As required by S 1352 Title 31 of the U.S. Code for persons entering into a grant or cooperative agreement over $100,000, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, in connection with making of any Federal grant, the entering into of any cooperative, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;

(b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting an officer or employee of any agency, Member of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts), and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by S1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Organization Name AO or NRA Number and Title

Printed Name and Title of Authorized Representative

Signature Date

Printed Principal Investigator Name Proposal Title

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

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- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:

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1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
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